

Subjects of the inventions are methods for enzymatic DNA labeling. Nucleotides modified to carry functional or detectable groups are incorporated into newly synthesized DNA by DNA polymerases. DNA is synthesized from modified nucleoside triphosphates by DNA polymerases such that the newly synthesized DNA consists exclusively of modified nucleotides or contains modified nucleotides in high density.

There are provided modified nucleoside triphosphates which are incorporated by DNA polymerases and a group of DNA polymerases which incorporate these nucleoside triphosphates in high density.